

- OECD (2001 a). Pension Systems and Retirement Incomes across OECD Countries.
- OECD (2001 b). Ageing and Income: Financial Resources and Retirement in 9 OECD Countries.
- OECD (2001 c). Social Expenditure Database 1980-1998, 3rd Edition.
- Schmaehl W. (1999). Public Pension Reforms in Germany- Major Post-War Reforms and Recent Decisions-. Social Security Research Abroad No. 126, IPSS.
- Schmaehl W. (2002). New developments and future directions of the Public Pension System in Germany. Journal of Population and Social Security, Special Issue.
- Takayama(1998),"Financing Social Insurance Pensions: The Experience of Japan," in Financing Retirement Benefits: The Asia and Pacific Experience, International Social Security Association,
- Takayama(1999),"Pension Provision for Specific Risk Groups: The Japanese Case," International Social Security Review,
- Winklevoss, Howard E.(1993) Pension Mathematics with Numerical Illustrations 2ed.,Pension Research Council
- Yamamoto K. (2003a). Feasibility Study of Public Pension Reform. Journal of the Society for Pension Study of Japan, Vol.22, 1-10. (in Japanese)
- Yamamoto K. (2003b). Part-timers and long term financial balance in the EPI. Research Report on the burden of social security in Japan.(in Japanese)

Table 1. International Comparison of Public Pension for Employees

	France	Germany	Japan	Sweden	U K	USA
Coverage E=Employees S=Self-employed, R=Residents	E	E/S	E	R	R	E/S
Contribution rate (%)	16.45	19.5	13.6	18.5	20.0 ¹	12.4
Tax earmarked for public pension	yes ²	yes ³	—	—	—	—
Financing method	PAYG	PAYG	PAYG +fund	PAYG +funding	PAYG	PAYG +fund
Government subsidies (%)	—	30	13 (1/3 of BP)	18		0
Normal pension age M/F	60	65	(65)	61-	65	(67)
Type of benefit F=Flat rate LS=Lifetime Salary	LS ⁴	LS	F+LS	LS ⁵	F+LS	LS
Type of benefit	DB	DB	DB	Notion.DC & DC	DB	DB
Contribution period for full pension (years)	38	40	40(BP)	-	50	35
Benefit accrual factor ⁶ for earnings related part	1.75	1.50	0.548	—	0.40	⁷
Maximum replacement rate (%)	50	60		—	20	41
Typical replacement rate (%) 40 years, Without / With dependent spouse		62 net 44 gross	38/52			41/61.5
Revaluation of previous earnings gW=gross Wages, nW=net Wages		gW	nW			gW
Indexation of benefits P=Price, W=Wages	P/gW ⁸	gW	P	gW	P	P

- Note: 1. Contribution rate of National Insurance, which is reduced according to earnings.
2. 1.3 percent point out of 7.5 percent of CSG (contribution sociale generalisee)
3. 1 percent point out of 16 percent of VAT and ecology tax
4. Best 12 years
5. Minimum guarantee for those aged 65 +
6. Benefit accrual factor per year of contribution, in percent of assessed earnings.
7. Benefit accrual factor increases as assessed earnings decline.
8. The basic scheme is indexed to prices, while the earnings-related schemes are indexed to gross wages.

Table 2. Simulation types for the EPI

	Current system	Fix Cont. 2004	Sim 1	Sim 2	Sim 3	Germany	Sweden	USA
Coverage								
Part-timer	No	No	Yes	Yes	Yes	Yes	Yes	Yes
Self-employed	No	No	No	Yes	Yes	Yes	Yes	Yes
Contribution								
Contribution rate (%)	13.6	20.0				22.0	17.21	12.4
Employer's portion	half	half	half	half	half	half	more	half
Proportion financed by tax revenue(%)	13	28				30	18	0
Effective contribution rate (%)	16	28				31	21	12.4
Benefit								
Normal pension age	65	65	65	65	65	65	61-	67
Type of benefit (Note 1)	F+LS	F+LS	F+LS	F+LS	LS	LS	LS	LS
Solidarity benefit formula (Note 2)					1 BP			2 BP
Minimum guarantee	Y/N	Y/N	Y/N	Y/N	Yes	No	Yes	No
Revaluation of previous earnings (Note3)	nW	TnW				gW		gW
Indexation of benefits (Note 3)	P	P'				g'W	gW	P

Note 1: F = flat rate, LS = lifetime salary

Note 2: BP means bend point in the benefit formula.

Note 3: gW = per capita gross wage, nW = per capita net wage, TnW = total net wage, $P' = P - (nW - TnW)$

Figure1 EPI Fund estimation; Simulation1

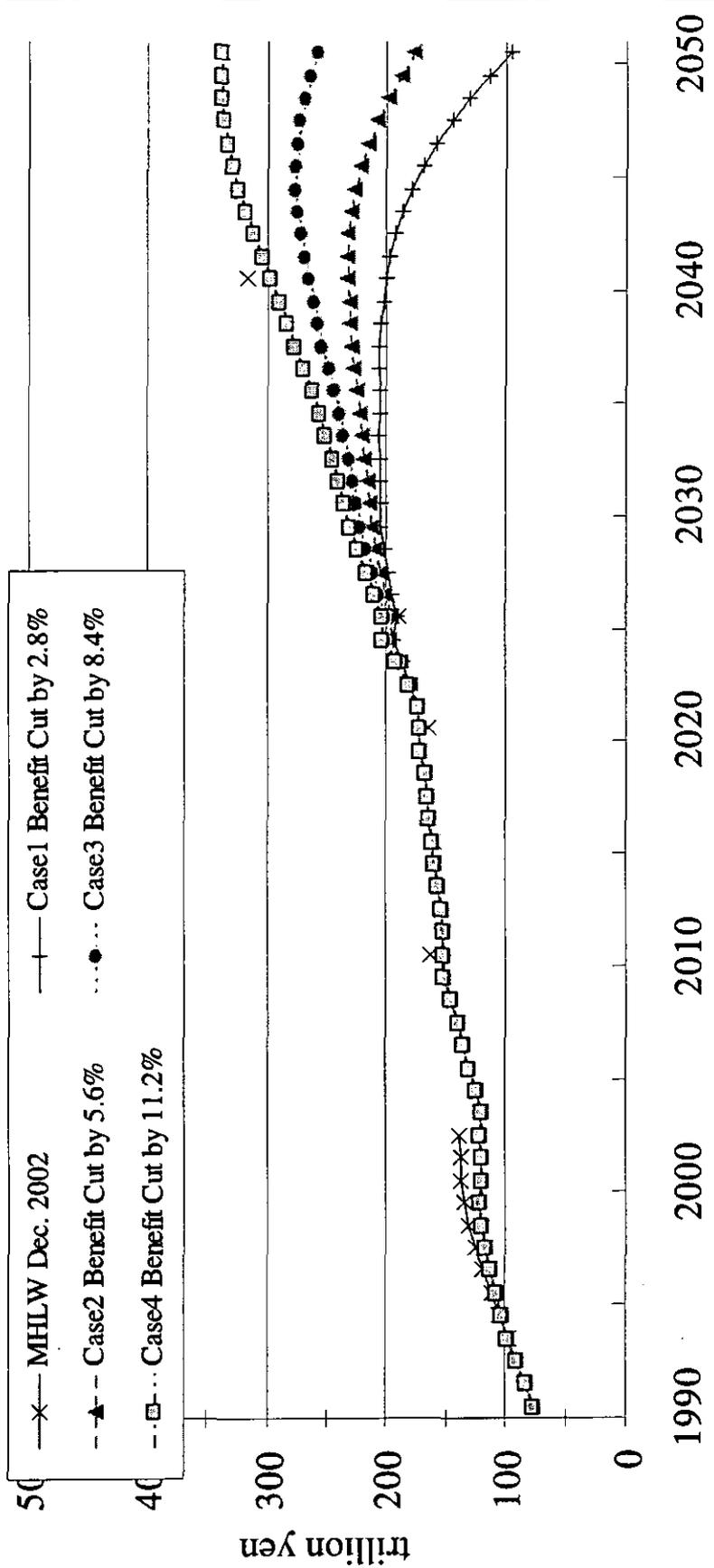


Figure2 Replacement Ratio (1990 = 100 , MHLW
Plan II); Simulation2

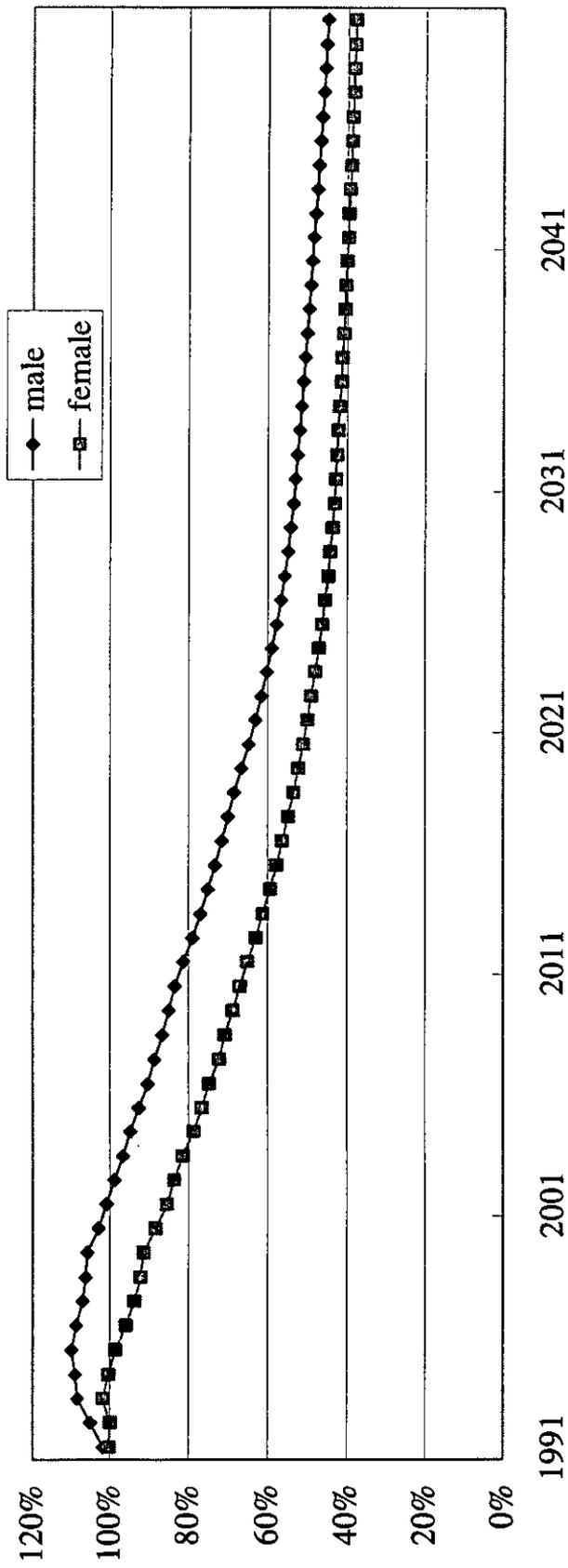


Figure 3 EPI Premium projection; Simulation2

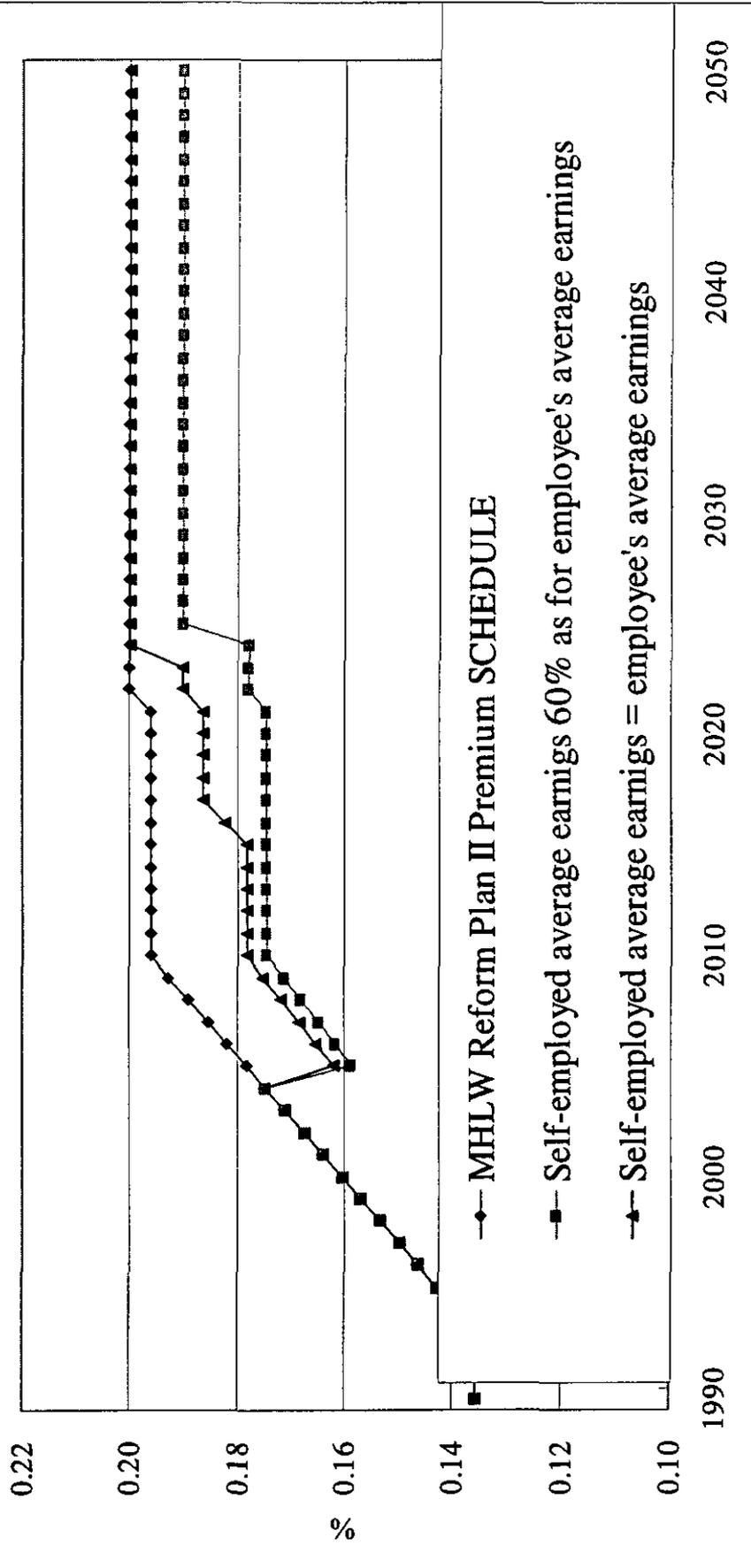


Figure 4 Accrual rate for Simulation3

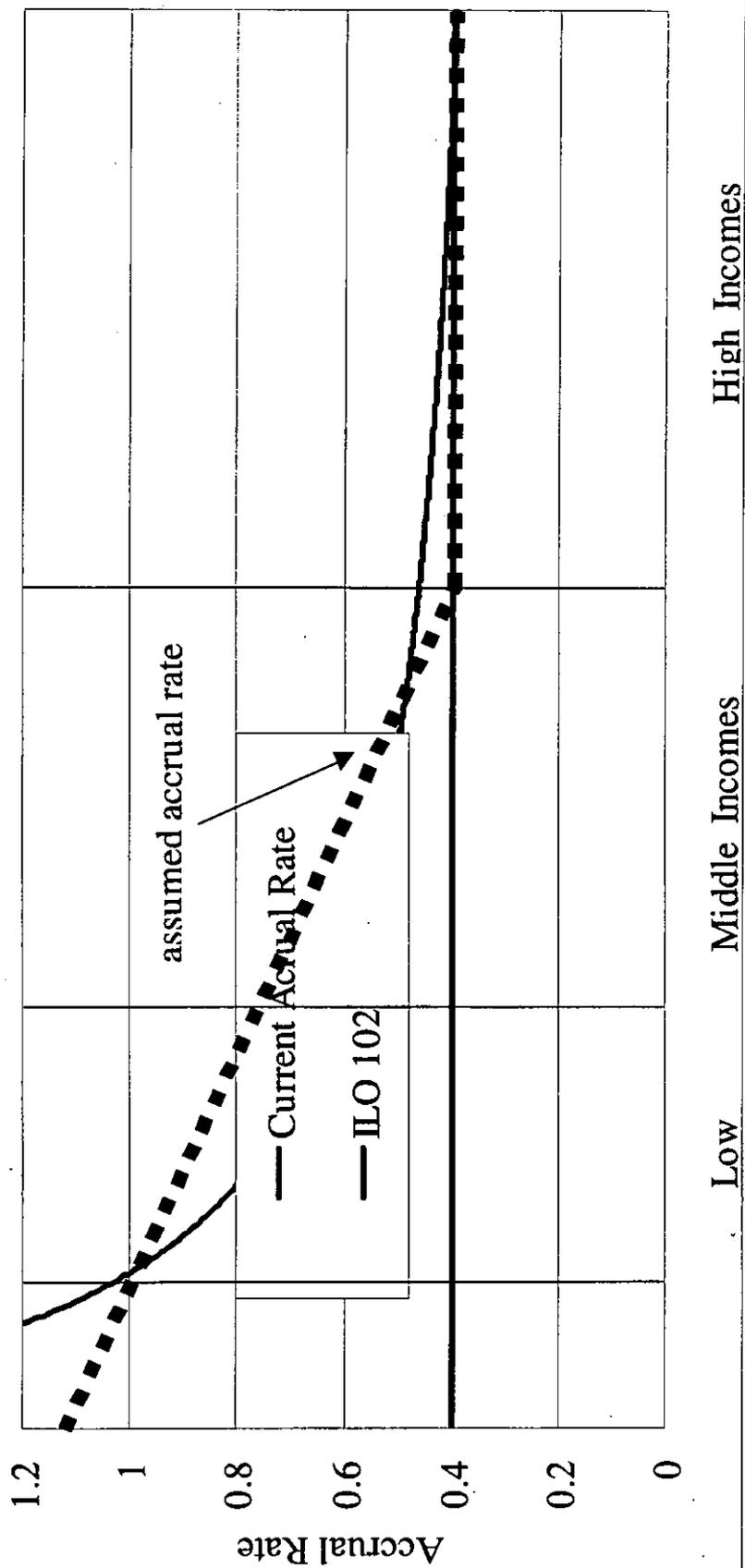


Figure 5 Replacement Rate and Premium; Simulation 3

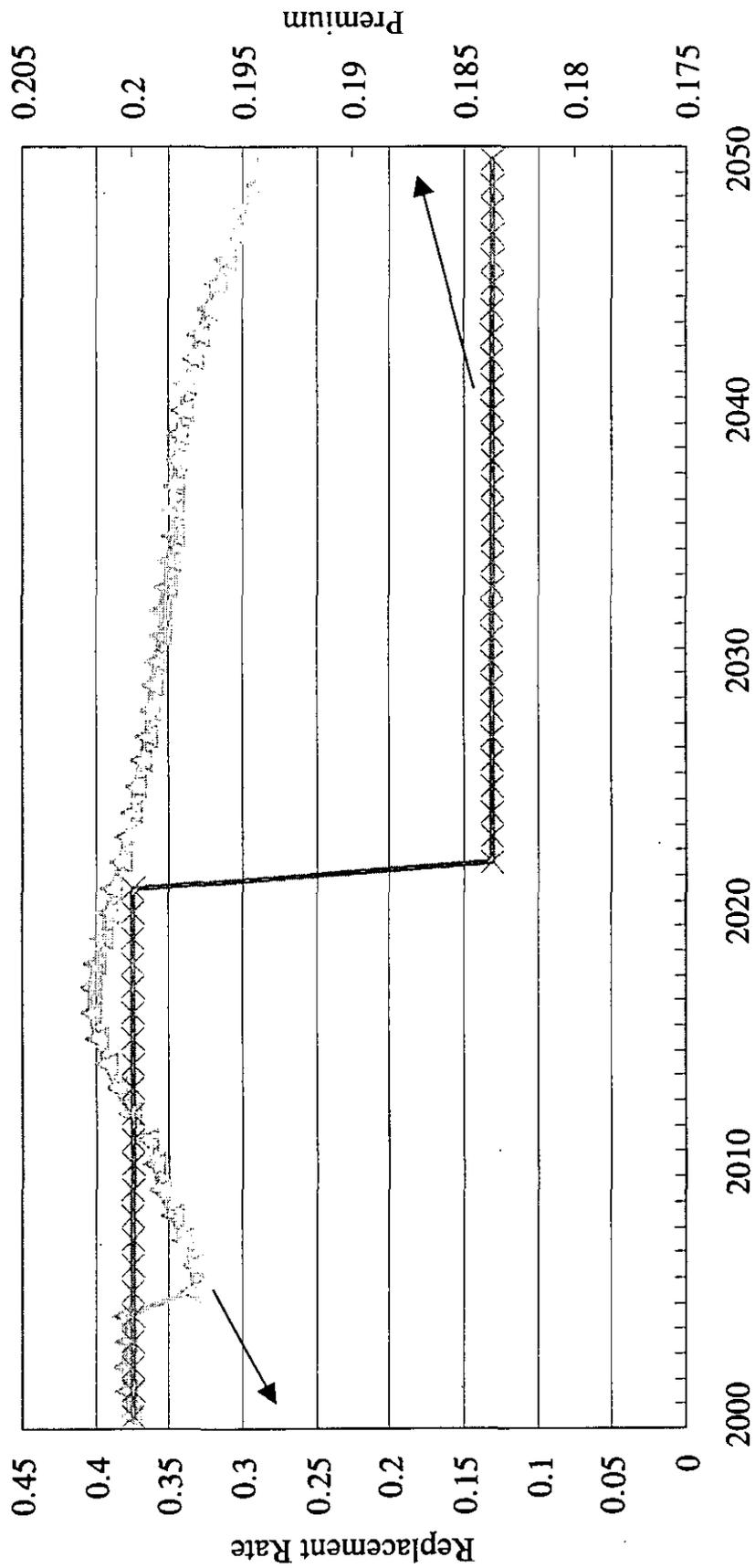


Figure 6 Pension Fund projection; Somulation3

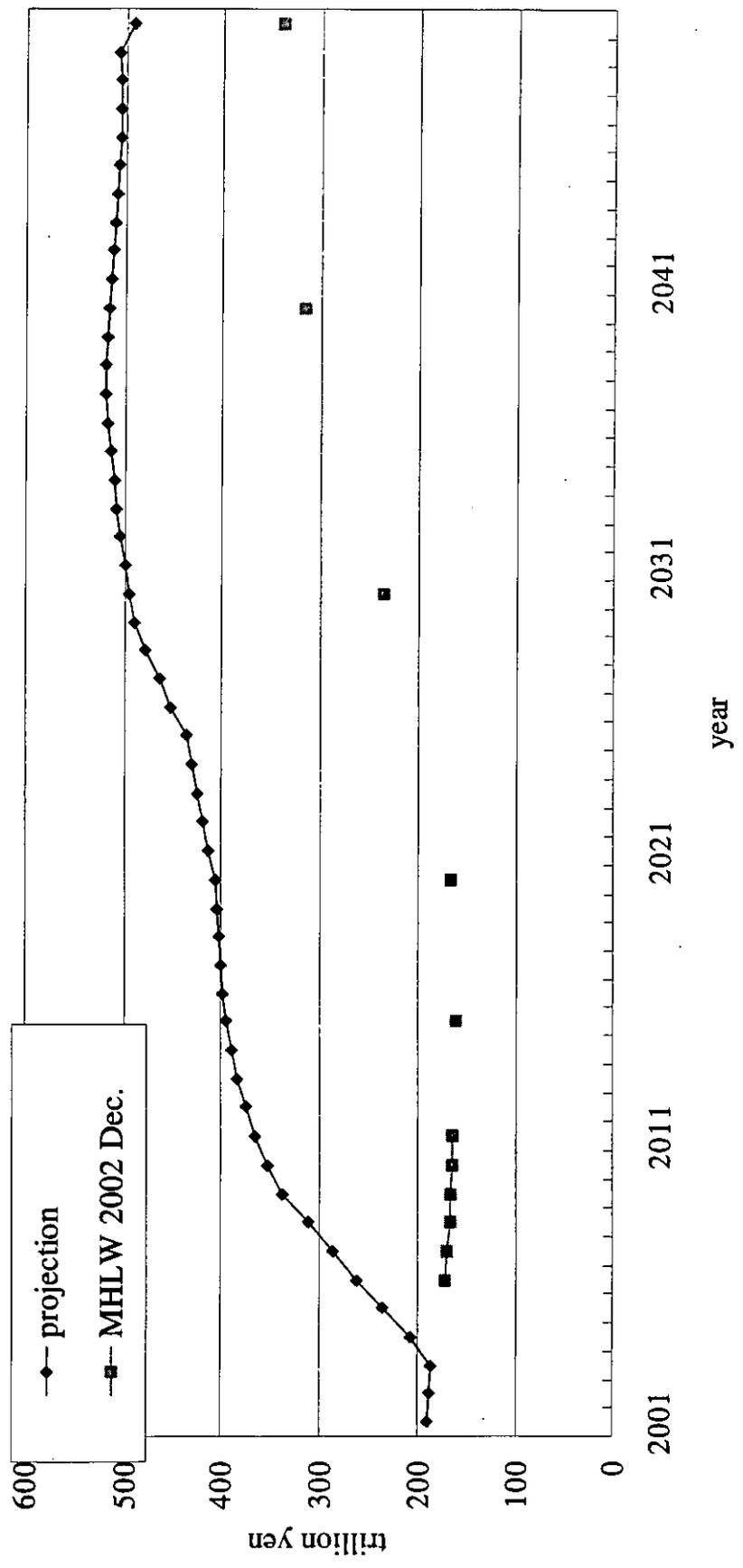


Table3 Main Result in 2025

	Current	Sim0	Sim1	Sim2	Sim3
Contribution Rate	13.6	20.0	20.5	21.0	18.5
Proportion financed by tax	13.0	28.0	16.3	18.0	24.1
Effective contribution rate	16.0	27.8	24.5	25.6	24.4
Benefit / GDP in 2025		9.01	9.90	11.58	11.67

$$\text{Effective contribution rate} = \frac{\text{Contribution Rate}}{(100 - \text{Proportion financed by Tax})}$$

2. 3 The 2000/2001 Pension Reform in Germany – Implications and Possible Lessons for Japan

**Harald Conrad (German Institute for Japanese Studies, Tokyo) and
Tetsuo Fukawa (National Institute of Population and Social Security Research)**

1. Introduction

The German pension system has undergone major changes in recent years. In fact, latest reform measures (passed in 2000 and partly implemented in 2001 and 2002) highlight a shift in strategy with regard to the evolving public-private pension mix. The core reform element is the partial substitution of public pensions by personal and occupational pension provisions.

Population aging due to low fertility and increased longevity has a strong impact on public pension programs in Germany and Japan. The latest public pension reforms in Japan and Germany have the same aim: to establish mid- and long-term stability of the system against aging of the population. In Germany, the financing basis has been actively extended, and the 2000/2001 pension reform invented a new formula to offset the reduction of public pension benefits by introducing a tax-supported voluntary corporate/private funded pension program. In Japan, trying to redefine the role of the public pension system and making the system less vulnerable to economic and demographic changes, the public pension reform in March 2000 and subsequent reforms in the corporate pension area employed such measures as 1) to expand the financing basis; 2) to reduce the benefit level; and 3) to rely more on private arrangements. Despite recent reforms, however, another round of reforms are being discussed in both countries.

The purpose of this paper is to give an overview of the 2000/2001 pension reform in Germany and discuss its implications and possible lessons for future pension reform in Japan.

2. Structure of the German Pension System

The German pension system consists of three tiers, namely the mandatory public schemes (first tier), the supplementary occupational schemes (second tier) and additional voluntary personal old-age provisions (third tier).

2.1 First tier

Within the first tier the most important scheme is the statutory social pension insurance, which covers all white- and blue-collar workers as well as some groups of the self-employed and is run by state-controlled institutions. This social pension insurance consists of three branches for blue-collar workers, white-collar workers and miners. The former two branches are identical in terms of pension calculation and financing and there are fiscal equalization rules between the two branches. Miners' pensions differ from the other two branches in terms of benefits (a mixture of first and second tier elements) and contribution rates. In terms of covered workers and expenditure, the statutory social pension insurance is by far the largest scheme of the first tier. Besides this scheme, there are special schemes for farmers and civil servants. All of these schemes are basically financed on a pay-as-you-go (PAYG) basis. However, there are also schemes for members of professional associations, such as doctors, lawyers, architects, tax consultants and pharmacists, which are capital funded.¹

Benefits are paid in case of old age, disability and to survivors. With the exception of the schemes for members of professional associations, all of the above-named schemes pay benefits of the defined benefit type.

The calculation of benefits for the insured of the social pension insurance is based on the relative gross earnings (i.e. individual gross earnings compared to average gross earnings of all employees) for all years of the earning career, and pension claims are accumulated in individual accounts. The benefits are financed on a PAYG basis by contributions of employees and employers from gross earnings up to a ceiling of about 200

¹ About half of the self-employed are not mandatorily covered by any scheme, and there is scant empirical information on the volume and type of savings of those in this group (Fachinger and Oelschläger 2000).

percent (190 percent in 2001) of average earnings. General tax revenues cover about 26 percent of the pension expenditure for blue- and white-collar workers but 59 percent for miners (Table 1).

<Table 1 >

Civil servant pensions are paid out of public budgets on a PAYG basis and are a combination of first and second tier benefits. The percentage of last (gross) earnings (at a maximum of 75 percent) depends on the number of years in service. Also farmers' pensions are mainly financed by general tax revenues.

2.2 Second tier

There are occupational pension schemes in the private and public sector. In the public sector, basically all workers are covered by collective agreements. These defined benefit schemes were until recently integrated with social pension insurance in such way that they would pay a certain percentage of last earnings. In the private sector, occupational pension schemes are mostly voluntary. The percentage of covered workers varies widely depending on the sector and the size of companies. During the 1990s, coverage of occupational pensions has continuously declined. In the manufacturing industry of West Germany, the ratio of employees belonging to an occupational pension plan to the total workforce dipped from 72 percent to 64 percent between 1987 and 1999. In the wholesale and retail trade, this ratio stagnated at a low level of 28 percent. In East Germany, coverage was below 20 percent in all sectors (Deutsche Bundesbank, 2001: 52). Unfavorable tax regulations and high costs as part of labor costs are often mentioned to explain the diminishing role of occupational pensions in Germany. Another reason is that until pension funds of the defined contribution type were first introduced in 2001, most occupational pension schemes in the private sector (with the exception of direct insurances) were defined benefit schemes and many companies eschewed the unpredictability of pension liabilities.

Book reserve funds (Direktzusagen), which hold more than half of all accumulated assets in occupational schemes (Table 2), are of special importance, because they function as an instrument of (self-)financing of companies. Company and pension institution do not have a separate legal identity. The employer guarantees to pay the employee a retirement

pension. Pension insurance funds (Pensionskassen) are legally independent institutions in the form of mutual insurance associations. Financing is by employers, but employees can also contribute. Employees have a legal claim on the fund and contributions must be fixed in such a way that the fund is able to form the necessary cover funds. Support funds (Unterstützungskassen) are also legally independent pension institutions, set up by one company or a group of companies in the form of registered associations. Financing is only by the employer. Formally, the employee has no legal entitlement to the benefits promised by the support fund. In fact, since contributions by the employer are recognized as deductible operating expenses to a limited extent only, these funds are unable to fully fund pension commitments. In the case of direct insurances (Direktversicherungen), the employer takes out an individual or group policy with a life insurance company on behalf of the employee. Usually, the employer shoulders the costs of these schemes.

<Table 2 >

2.3 Income of the elderly

There exist no comprehensive statistical data on personal savings and insurance for old age in Germany. However, data from the German Socio-Economic Panel show that capital income contributes 12.4 percent to total income of the elderly, much less than that in the United States (Table 3). Looking at income shares of total disposable income by quintiles, we see that persons belonging to the lowest quintile in Germany receive 87.1 percent of their income from the public pension system, compared to 70 percent in the United States. When we look at the highest quintile, bigger differences between the two countries become apparent. Whereas the highest quintile in the United States receives almost 42 percent of their total disposable income from capital and only 20 percent from public pensions, Germans belonging to the same quintile still receive almost 62 percent of their disposable income from public pensions and only 20 percent from capital income. These data show that public pensions are by far the dominating income source of the elderly in Germany. Thus, it is not surprising that latest pension reforms enacted in 2001 have stirred much public discussion, because public benefits were curtailed substantially whereas private (personal and occupational) provisions are supposed to close the emerging benefit gap.

< Table 3 >

3. The 2000/2001 Reform Measures in Germany

The various measures of the latest pension reform in Germany can be grouped into six areas of action:

1. Reduction of the replacement rate via changes in the pension formula;
2. Introduction of subsidies/tax privileges-granted private pension;
3. Changes to occupational pensions;
4. Introduction of means-tested transfer payments for people over 65 and disabled persons;
5. Changes in widow(er)s' pensions and pensions for women; and
6. Changes in disability pensions.

Before we discuss these changes in more detail, we need to introduce the German pension formula. Germany's social pension insurance scheme is characterized by a relatively close link between individual contributions and later benefits, which is only modified by several measures of interpersonal income redistribution (e.g., by crediting years spent without gainful employment and without paying contributions during periods of schooling, illness, or child care). There is no general minimum pension. However, the 2000/2001 pension reform has introduced means-tested transfer payments for people over 65 and disabled persons, who have insufficient income (see Sec.3.3).

The German pension formula is a product of three factors:

$$\text{Pension} = \text{PEP} \times \text{RAF} \times \text{ARW}$$

PEP = Individual earnings points (Persönliche Entgeltpunkte)

RAF = Pension factor (Rentenartfaktor)

ARW = Current pension value (Aktueller Rentenwert)

PEP is calculated for all years of participation in the pension system. It is the sum of ratios of individual earnings (up to a limit) to average earnings in each year. Some points are credited for periods of schooling, illness or childcare. The sum is afterwards multiplied by a factor (Zugangsfaktor), which adjusts the sum to the age of retirement, i.e. if a person retires before 65 the pension is decreased. RAF is 1 in the case of an old-age pension, 0.6 in the case of a survivor's pension and 0.6667 in the case of disability. ARW represents the

value of one's earnings point in a specific year. ARW is the dynamic factor of the German pension formula, because it changes every year according to the growth rate of average earnings of the working population. The rate of change of ARW is the central factor for adjusting all pensions calculated in former years. From the 1992 pension reform up to 2001, ARW was linked to the development of average net earnings instead of average gross earnings as was the case since the 1957 pension reform.

3.1 Reduction of the replacement rate via changes in the pension formula

The central objective of the latest pension reform was to limit the increase in the contribution rate. It was decided that up to the year 2020, the contribution rate to statutory pension insurance should not be higher than 20 percent, and not exceed 22 percent until 2030. Before the reform, official calculations assumed the contribution rate to reach 24 percent in 2030. There was a broad consensus that such a high increase in labor costs could not be tolerated. In order to limit future increases of the contribution rate, the replacement rate of the standard pensioner (45 earnings points) was lowered from 70 to 64 percent of average net earnings in 2030 via adjustments in the pension formula. The resulting income gap is supposed to be filled by subsidized voluntary private pension up to four percent of earnings. In the pension adjustment formula, the link to net average earnings of the working population was abolished. Instead, there is now something called a "modified gross wage indexation".

The new calculation formula for ARW in the years 2002 to 2010 is:

$$\frac{ARW_{(T)}}{ARW_{(T-1)}} = \frac{L_{(T-1)} \times (1 - b_{(T-1)} - v_{(T-1)})}{L_{(T-2)} \times (1 - b_{(T-2)} - v_{(T-2)})}$$

L = average gross earnings

b = employer and employee's contribution rate to statutory pension insurance

v = contribution rate to certified forms of private pension

The change in the indexation mode was introduced because direct taxes in Germany are to be reduced in return for increases in indirect taxes. Lower direct taxes would, however, result in higher pension adjustments based on net earnings development. For this reason, it was decided to return to an adjustment mode following the development of gross wages.

Changes in average gross wages are, however, not directly translated into changes of ARW. Instead, the contribution rate to statutory pension insurance and the contribution rate to certified private pension are integrated in the new formula in such a way that increasing contributions reduces the adjustment rate. Beginning in 2002, voluntary contributions (starting at 0.5 percent of the employee's gross income and rising progressively to 4 percent in 2008 and afterwards) are eligible for tax deductions or direct subsidies. These voluntary contributions are taken into account in the new pension formula regardless whether the individual employee really puts his/her money into the new certified forms of private pension. Thus there is a sort of virtual factor in the new pension formula.

In order to control the projected contribution rate, which is not allowed to rise above a level of 22 percent, the pension formula will be changed again in 2011. At this point a so-called ad-hoc factor of 0.9 will be introduced solely to limit future increases in the contribution rate. The calculation formula of ARW from 2011 onwards will be as follows (Ebert, 2001):

$$\frac{ARW_{(T)}}{ARW_{(T-1)}} = \frac{L_{(T-1)} \times (0.9 - b_{(T-1)} - v_{(2009)})}{L_{(T-2)} \times (0.9 - b_{(T-2)} - v_{(2009)})}$$

3.2 Introduction of subsidies/tax privileges-granted private pension

The described reduction of state pensions is supposed to be compensated through supplementary pension schemes, which operate outside the mandatory state system. Employees who voluntarily save in private supplementary pension schemes, which meet certain criteria, are granted either subsidies or tax deductions in their personal income tax. Basically, lower income groups are to receive a subsidy whereas middle and higher income groups can reduce their income tax burden via tax deductions. In each individual case, the tax authorities check automatically which alternative is in the best interest of employees. In order to qualify for the maximum subsidies/tax privileges, employees have to save an increasing percentage of their monthly gross income (Table 4). If they save less, subsidies/tax privileges will be cut accordingly.

< Table 4 >

Figure 1 shows that the new subsidy/tax privilege system is especially favorable to married couples and higher income groups. Although low-income groups can receive subsidies to build up their private pension savings, one may criticize that the new system favors especially those groups who are least affected by the benefit cuts of public pensions.

< Figure 1 >

In order to qualify for subsidies/tax privileges, the savings products have to fulfill several criteria (most important points only):

- Pensions cannot be claimed before reaching 60 years of age or before claiming a disability pension.
- The nominal value of employees' savings after deduction of administrative costs has to be guaranteed, i.e. the nominal rate of return on savings has to be at least zero.
- The accumulated savings must be paid out as a lifelong pension or as planned withdrawal up to the age of 85 and thereafter as a lifelong pension. At retirement age, a maximum of 20 percent of assets may be received as lump sum.

The new subsidy/tax privilege system is in fact highly complicated because it applies to both personal pension products and occupational pension schemes with the exception of book reserve funds and support funds. In fact, there are now three more alternative ways of personal pension provision through occupational schemes:

1. Employees are entitled to allocate part of their earnings up to 4 percent of the contribution ceiling in social pension insurance into three types of occupational pension schemes (Entgeltumwandlung): pension insurance fund, direct insurance and the newly introduced pension plans (see below). In this case, they can make use of the subsidy/tax privilege system, or
2. they save from gross earnings, while these savings are exempted from income tax and social insurance contributions up to the year 2008, or
3. they save in direct insurance with a flat tax rate of 20 percent (instead of individual tax) and without paying social insurance contributions on these savings (up to 2008 and only in the case that earnings conversion is not by regular earnings but holiday or Christmas money).

The new subsidy/tax privilege system has not only been criticized for its very restrictive criteria which the investment products have to meet in order to qualify, but also for the complex and difficult choices which have to be made by employees and employers. The best way for creating additional private pension provisions in Germany depends very much on individual circumstances (income, tax bracket, number of children, etc.). In general, lower income earners are likely to make use of the subsidies/tax privileges granted for private pension savings, whereas most middle and high income earners will find it more attractive to make use of the right to convert parts of their gross income into occupational pension schemes while these savings are exempted from income tax and social insurance premiums. Since the introduction of the new pension legislation, coverage of occupational pensions has increased from 29 percent (April 2001) in the private sector to almost 42 percent in March 2003, with almost 9.6 million insured employees (Bundesministerium für Gesundheit und Soziale Sicherung, 2003). An important factor which led to this sharp increase in coverage was the fact that many labor unions made country-wide deals with employers' associations to make systematic use of the right of employees to convert parts of their gross income into occupational pension schemes.

3.3 The other measures

In addition to the existing four types of occupational pension schemes, the latest reform added pension funds as a fifth type of employment-based pensions. There were and are various rules and caps on investing money in the existing schemes. However, pension funds can invest up to 100 percent in equities. This new option is supposed to give pension and financial markets in Germany new momentum. However, since employees are likely to favor pension products that qualify for the new subsidies/tax privileges, even pension funds will be forced to follow rather conservative investment policies in order to ensure that the nominal value of savings does not decrease. Employees are entitled to allocate part of their earnings up to 4 percent of the contribution ceiling in social pension insurance into three types of occupational pension schemes as described above. The latest reform also reduced vesting periods for pension claims based on employer payments from 10 to 5 years. There

are also various changes to the tax regulations of occupational pensions, which are likely to make these schemes more attractive.

There has been no general minimum pension in Germany. However, means-tested transfer payments have been introduced since 2003 for those people over 65 and disabled persons. These payments are calculated in the same way as means-tested social assistance. However, contrary to the regulations of social assistance where children are in principle obliged to pay back the whole sum or part of it, children are not under financial obligation if their annual income does not exceed 100,000 Euro. As in the case of social assistance, the municipalities will run this new safety net for which they will receive additional financial grants from the central government.

The above described reduction of old-age pensions via changes in the adjustment formula do apply to widow(er)s' and disability pensions. On top of that, widow(er)s' pensions were lowered from 60 to 55 percent of the insurance pension of the former spouse. The idea is that widow(er)s' pensions should be phased out in future in favor of own pension claims from earnings and additional credits for child care (2 Individual Earnings Points for the first child and 1 Individual Earnings Point for each additional child). Additionally, if a widow(er)'s pension exceeds a certain allowance, an income test takes place. This income test so far only included working income and the spouse's own pension; now it includes all kinds of income (e.g. interest and dividends and own pension).

As an alternative to the reformed widow(er)s' pension, an option of splitting pension entitlements was introduced during the latest reform. This option only applies to couples married after December 31, 2001. They can decide to split their pension entitlements when they both reach retirement age or when one partner dies. In these cases, the pension entitlement of the partner with the lower sum of Individual Earnings Points is raised by half of the difference to the partner with the higher sum of Individual Earnings Points (Table 5). In order for the couple to decide which option is better, i.e. whether to split pension entitlements or go for a widow(er)'s pension, they will have to consider a number of questions such as which partner is likely to live longer, whether there is any additional income of the surviving spouse which might reduce a widow(er)'s pension, how